IN THE CLAIMS:

1.(Twice amended) A method of inspecting a DNA chip which is ~~by irradiating a DNA chip with a plurality of M multi-spot excitation lights having a desired wavelength and of analyzing obtained fluorescent lights generated from said DNA chip, said DNA chip being~~ obtained by hybridizing a target with DNA, said target being obtained by adding a desired fluorescent material to a DNA fragment formed by preprocessing from DNA that is an object to be inspected, said DNA chip including a plurality of L cells that are microscopic areas where a plurality of types of desired fragments are arranged in accordance with a predetermined rule, ~~where M is the number of multi-spot excitation lights and L is the number of cells,~~ comprising: ~~the steps of:~~

irradiating a plurality of cells ~~mutually different positions~~ of said DNA chip with a ~~said~~ plurality of ~~M~~ multi-spot excitation lights simultaneously through ~~with the use of~~ an objective lens for a time Δt that is longer than a fluorescent light attenuation time so as to generate fluorescent lights from said DNA chip, said multi-spot excitation lights having a spot diameter d that is smaller than a dimension D of said each cell of said plurality of L cells,

dividing an optical pass of ~~guiding~~ said generated fluorescent lights from said multi-spot excitation lights, ~~DNA chip to a fluorescent light detecting optical path,~~

~~separating and~~ detecting said fluorescent lights with a sensor after reducing components of ~~from respective multi-spot lights generated by~~ said multi-spot excitation lights reflected from said DNA chip and entered into said optical pass of said generated fluorescent lights, and ~~irradiated onto said DNA chip, and~~

getting information on ~~executing an inspection of said DNA chip in accordance~~ ~~with~~ positions and intensities of said detected fluorescent lights so as to enable measurement of a coupled state ~~a determination of a kind and density~~ of the hybridized target DNA.

2. (Twice amended) The ~~inspecting~~ method as claimed in Claim 1, wherein said plurality of ~~M~~ multi-spot excitation lights are arranged in a 1-dimensional or 2-dimensional configuration. ~~with a fixed pitch on a straight line.~~

3. (Twice amended) The ~~inspecting~~ method as claimed in Claim 1, comprising: ~~further comprising the steps of:~~

arranging said plurality of ~~M~~ multi-spot excitation lights irradiated onto said DNA chip on a straight line with a spacing of kd with reference to said spot diameter d and an integer k, and

repeating an operation in sequence k times, said operation being an operation where, after said irradiation with said spot array has been performed during said time Δt, said array is displaced in a direction of said straight line by substantially d and said irradiation is performed again during said time Δt, and thereby

executing said inspection toward kM spot positions in said straight line direction, and

displacing said DNA chip and said objective lens relatively at least in a direction perpendicular to said straight line direction, and thereby

inspecting a desired 2-dimensional area on said DNA chip.

4. (Twice amended) The ~~inspecting~~ method as claimed in Claim 1, comprising ~~further comprising the step of~~ providing fluorescent light detection deflecting means within said fluorescent light detecting optical path so that said fluorescent lights generated by said plurality of ~~M~~ multi-spot excitation lights are synchronized with said displacement of said spot array in said array direction and come onto substantially the same location on ~~said~~ light-receiving apertures.

5. (Twice amended) The ~~inspecting~~ method as claimed in Claim 4, wherein said fluorescent light detection deflecting means includes a wavelength selection beam splitter for permitting said excitation lights to pass therethrough and causing said fluorescent lights to be reflected.

6. (Twice amended) The ~~inspecting~~ method as claimed in Claim 1, comprising ~~further comprising the step of~~ providing a filter within said fluorescent light detecting optical path isolated from an excitation optical path, said filter permitting only said fluorescent lights to pass there-through ~~and~~ while light-shielding said excitation lights.

7. (Twice amended) The ~~inspecting~~ method as claimed in Claim 1, comprising ~~further comprising the step of~~ forming said ~~M~~ multi-spot excitation lights by using a plurality of laser light-sources.

8. (Twice amended) The ~~inspecting~~ method as claimed in Claim 7, wherein said ~~M~~ multi-spot excitation lights are obtained by: ~~the steps:~~

guiding, into optical fibers, said lights emitted from said plurality of laser light-sources, and

causing said lights to be emitted from light-emitting ends of said optical fibers, said light-emitting ends being aligned with M desired pitches.

9. (Twice amended) The ~~inspecting~~ method as claimed in Claim 1, wherein said excitation lights include a plurality of different wavelengths, and the method comprising ~~further comprising the step of~~ distinguishing different targets on said DNA chip, where a plurality of fluorescent materials having been added to said different targets.

10. (Twice amended) The ~~inspecting~~ method as claimed in Claim 9, comprising: ~~further comprising the steps of:~~

performing simultaneous irradiation with said excitation lights including said plurality of wavelengths, and thereby

distinguishing said different targets on said DNA chip so as to simultaneously detect said different targets in accordance with said plurality of fluorescent materials having been added to said different targets.

11. (Twice amended) The ~~inspecting~~ method as claimed in Claim 1, comprising: ~~further comprising the steps of:~~

directing ~~irradiating~~ a second light with an oblique incident angle on an inspection plane of said DNA chip;

detecting a reflection position at which said second light is reflected on said inspection plane; and

controlling a relative distance between said inspection plane and said objective lens in accordance with a result of detection of said reflection position.

12-17. (Non-elected; withdrawn from consideration.)

18. (Twice amended) A method of inspecting a DNA chip, comprising: ~~An inspecting method, comprising the steps of:~~

branching a laser beam so as to form eight or more beams, said laser beam being emitted from at least one laser light-source,

irradiating an inspection plane of a DNA chip with said eight or more beams,

~~causing fluorescent lights to be generated from said DNA chip and~~ separating ~~said~~ fluorescent lights emitted from said DNA chip by the irradiation of said branched laser beams from reflected lights of said beams so as to detect said fluorescent lights,

detecting said separated fluorescent lights with a sensor, and

getting information from ~~inspecting~~ said DNA chip in accordance with information of position and intensities of said detected ~~on said~~ fluorescent lights. ~~detected.~~

19. (Twice amended) A method of inspecting a DNA chip, comprising: ~~An inspecting method, comprising the steps of:~~

branching a laser beam into a plurality of beams having substantially the same intensity, said laser beam being emitted from at least one laser light-source,

projecting images of said plurality of branched beams onto an inspection plane of a DNA chip through a projection optical unit,

detecting, through an imaging optical unit, images of fluorescent lights emitted ~~generated~~ from said DNA chip by said projected images of said plurality of beams, and

getting information from ~~inspecting~~ said DNA chip on a basis of ~~in accordance with information on~~ said detected images of said fluorescent lights.

20. (Twice amended) The ~~inspecting~~ method as claimed in Claim 19, wherein said DNA chip is inspected by irradiating said DNA chip with said beams while displacing said DNA chip and said beams relatively in a 2-dimensional manner.

21. (Twice amended) The ~~inspecting~~ method as claimed in Claim 19, wherein said DNA chip is irradiated with said branched beams arranged in 2-dimensions. ~~located in a 2-dimensional manner.~~

22. (Twice amended) A method of inspecting a DNA chip, comprising: ~~An inspecting method of irradiating a sample with multi-spot excitation lights so as to detect fluorescent lights generated from said sample, said sample attaching DNA with at least one fluorescent molecule, comprising the steps of:~~

irradiating said DNA chip with multi-spot excitation light so as to emit fluorescent lights from said DNA chip,

separating said fluorescent lights from said multi-spot excitation lights, ~~said fluorescent lights being emitted from respective multi spots obtained by irradiating said sample with said multi-spot excitation lights including M microscopic spots, where M is the number of microscopic spots,~~

detecting ~~fluorescent light~~ images of said fluorescent lights emitted from said sample by ~~with the~~ use of a plurality of light detecting devices capable of executing a photon counting,

photon-counting, individually, each of photon signals obtained from said respective light detecting devices,

storing, individually, data of photon-counted numbers Npm detected by said respective light detecting devices,

changing positions of said multi-spot lights and a position of said sample relatively so as to store in sequence data of said photon-counted numbers from said respective light detecting devices,

collecting stored data on said photon-counted numbers over a desired range on said sample, ~~and~~

constructing a fluorescent light image from said collected data, and ~~so as to execute said inspection~~

deriving information for said DNA chip from information on said constructed fluorescent light image.

23. (Twice amended) A method of inspecting a DNA chip, comprising: ~~An inspecting method of irradiating a sample with sheet-shaped excitation lights so as to~~

~~detect fluorescent lights generated from said sample, said sample attaching DNA with at least one fluorescent molecule, comprising the steps of:~~

irradiating said DNA chip with a sheet-shaped excitation light so as to emit a fluorescent light from said DNA chip,

separating said fluorescent lights from said sheet-shaped excitation lights, ~~said fluorescent lights being emitted from irradiation areas, said irradiation areas being obtained by irradiating said sample with said sheet-shaped excitation lights,~~

detecting ~~fluorescent light~~ images of said fluorescent lights emitted from said sample by ~~with the~~ use of a plurality of light detecting devices capable of executing a photon counting,

photon-counting, individually, each of photon signals obtained from said respective light detecting devices,

storing, individually, data of photon-counted numbers Npm detected by said respective light detecting devices,

changing positions of said irradiation areas and a position of said sample relatively so as to store in sequence data of said photon-counted numbers from said respective light detecting devices,

collecting stored data on said photon-counted numbers over a desired range on said sample, ~~and~~

constructing a fluorescent light image from said collected data, and

deriving information for said DNA chip in accordance with information on said constructed fluorescent light image. ~~so as to execute said inspection.~~

24. (Twice amended) The ~~inspecting~~ method as claimed in Claim 22, wherein said ~~M is equal to~~ multi spot excitation lights include 10 or more microscopic spots.

25. (Twice amended) The ~~inspecting~~ method as claimed in Claim 24, wherein said ~~M is equal to~~ multi spot excitation lights include 50 or more microscopic spots.

26. (Twice amended) The ~~inspecting~~ method as claimed in Claim ~~22~~ 24, wherein said ~~multi-spots~~ microscopic spots are arranged on a 1-dimensional straight line or a 2-dimensional array.

27. (Twice amended) The ~~inspecting~~ method as claimed in Claim 22 or 23, wherein said multi-spot excitation lights or said sheet-shaped excitation lights are colored lights having 2 or more wavelengths.

28. (Twice amended) A method of inspecting a DNA chip by detecting fluorescent lights generated from a fluorescent material on a DNA sample, comprising~~:~~ ~~the steps of:~~

separating said fluorescent lights from excitation lights irradiated onto said DNA sample, said fluorescent lights being emitted from respective multi-spots or sheet-shaped irradiation locations on said DNA sample that is obtained by irradiating said DNA sample with said excitation lights in the form of multi-spot excitation lights or sheet-shaped excitation lights, said multi-spot excitation lights including M microscopic spots, where M is the number of microscopic spots,

detecting fluorescent light images from said fluorescent lights emitted from said DNA sample with the use of a plurality of M light detecting devices in an average pixel detecting time of (300 μsec/M) or less,

storing, individually, signals obtained from said respective light detecting devices,

changing, relatively, positions of said multi-spot lights or said sheet-shaped excitation lights and a position of said DNA sample so as to store said signals in sequence,

collecting said stored signals over a desired range on said DNA sample, ~~and~~

constructing a fluorescent light image from said collected and stored signals, and

deriving information from said DNA chip in accordance with information on said constructed fluorescent light image.

29. (Twice amended) A method of inspecting a DNA chip by detecting fluorescent lights generated from a fluorescent material on a DNA sample, comprising the steps of:

separating said fluorescent lights from excitation lights irradiated onto said DNA sample, said fluorescent lights being emitted from respective multi-spots or sheet-shaped irradiation locations on said DNA sample that is obtained by irradiating said DNA sample with said excitation lights in the form of multi-spot excitation lights or sheet-shaped excitation lights, said multi-spot excitation lights including M microscopic spots having a diameter or focus-achieving width which is smaller than 3 μm and larger than 0.3 μm, said sheet-shaped excitation lights having a width that is

smaller than 3 μm and larger than 0.3 μm, where M is the number of microscopic spots,

detecting fluorescent light images emitted from said DNA sample with use of a plurality of light detecting devices,

storing, individually, signals obtained from said respective light detecting devices,

changing, relatively, positions of said multi-spot lights or said sheet-shaped excitation lights and a position of said DNA sample so as to store said signals in sequence,

collecting said stored signals over a desired range on said sample, ~~and~~

constructing a fluorescent light image from said collected signals, and

deriving information for said DNA chip in accordance with information on said constructed fluorescent light image.

30-35. (Non-elected; withdrawn from consideration.)